



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/873,614	06/04/2001	Paul S. Weiss	P05185US1	4074

27407 7590 08/28/2002

MCKEE, VOORHEES & SEASE, P.L.C.
ATTN: PENNSYLVANIA STATE UNIVERSITY
801 GRAND AVENUE, SUITE 3200
DES MOINES, IA 50309-2721

EXAMINER

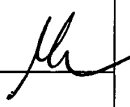
NGUYEN, KHIEM D

ART UNIT PAPER NUMBER

2823

DATE MAILED: 08/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/873,614	Applicant(s) WEISS ET AL.	
	Examiner Khiem D Nguyen	Art Unit 2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 30-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 10-12 and 16-18 is/are rejected.
- 7) ☒ Claim(s) 5-9, 13-15, 19-29 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of claims 1-29 in Paper No. 5 is acknowledged. The traversal is on the ground(s) that, see the traverse. This is not found persuasive because inventions of method group (II) and device group (I) have different classifications so the searches are non-coextensive. Further, the examiner has shown that the device of Group I invention could be made by a process materially different from that of the Group II invention. For example, the process of claim 1 can be materially altered by forming a residual structure on the substrate by masking and etching without using a multilayer organic molecule resist. See the restriction.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
3. Claims 1-4, 10-12 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasago et al. (U.S. Patent 4,745,042) in view of Loesch et al. (U.S. Patent 6,231,668).

Sasago teaches a method for manufacturing nanostructure patterns comprising
(See col. 2, lines 44-59, col. 18, lines 7-40 and FIGS. 7(A)-7(D)).

Art Unit: 2823

overlaying a multilayer organic molecule resist (14,16) on at least a portion of a parent structure 12 selectively deposited on a silicon substrate 10;

depositing a layer 18 over the parent structure and in contact with at least a portion of the multilayer organic resist; and

removing the multilayer organic molecule resist to leave a residual structure (16a, 18b) wherein removing the multilayer organic molecule resist removes a portion of the deposited layer;

Sasago fails to teach removing the organic resist by chemical and electrochemical processes as recited in present claims 2-3.

However, the processes of removing the organic resist by chemical and electrochemical are well known to one of ordinary skill in the art.

Sasago fails to teach that smoothing the parent structure is accomplished chemically and electrochemically as recited in present claims 16-18.

However, the processes of smoothing the parent structure chemically and electrochemically are well known to one of ordinary skill in the art.

Sasago fails to teach imaging the residual structure with electron microscopy and scanning probe microscopy as recited in present claims 10-11.

Loesch teaches the technical devices used for ultrahigh-resolution imaging of structures included electron microscopy and scanning probe microscopy. See the Abstract. It would have been obvious to one of ordinary skill in the art to incorporate Loesch's teaching into Sasago's method because in doing so the data obtained can be evaluated and recorded. See the Abstract.

Art Unit: 2823

Allowable Subject Matter

4. Claims 5-9, 13-15, 19-29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khiem D Nguyen whose telephone number is (703) 306-0210. The examiner can normally be reached on Monday-Friday (8:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (703) 308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-9179 for regular communications and (703) 746-9179 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

K.N.
August 22, 2002

L. Ph
LONG PHAM
PRIMARY EXAMINER